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| **2022-2023** | **Bachelor of Science (B.S.) Degree – Biology Major – General Biology Concentration  Name:** **ID:** | | | | | | | |
| Courses in **BOLD** are required by this major  Courses in ITALIC are strongly recommended  +denotes courses offered only every other year  § Indicates general education requirement.  \*Indicates course satisfies general education requirement.  Students must choose one 3-hour course in each of the following areas: Art,  History, Humanities,  Natural Science  and  Social Sciences  ALSO REQUIRED FOR GRADUATION:  •120 credit hours  •39 Upper division credits  •2.00 GPA  •Completion of all requirements  Key:  GE##=General Education  LL=Life & Leadership  SS=Strategic Skills |
| **First Year Fall** | **Learning Outcome** | **Sem Hours** | **Date Met** | **First Year Spring** | **Learning Outcome** | **Sem Hours** | **Date Met** |
| **BIOL1500 Biology** **I** **w/ lab** |  | **4** |  | **BIOL1520 Biology II w/ lab** |  | **4** |  |
| **CHEM1410 General Chemistry I Workshop w/lab** | **GE3D** | **4** |  | **CHEM1420 General Chemistry II Workshop w/lab** |  | **4** |  |
| **MATH1510 Calculus I\* or**  **MATH1500 Applied Calculus\* or**  **MATH1280 College Algebra\*** | GE2B | 3-4 |  | **CHEM1450 Introduction to Organic and Biochemistry** |  | 1 |  |
| ENGL1100 Composition I | GE1A | 3 |  |
| UNIV1100 Digital Fluency & Citizenship | SS | 3 |  | LEAD1200 Self Leadership II | LL | 2 |  |
| LEAD1100 Self Leadership I | LL | 2 |  | UNIV1200 Health and Wholeness | SS | 3 |  |
| **Total Hours** |  | **16 -17** |  | **Total Hours** |  | **17** |  |
| **Notes:** Join clubs and organizations on campus (Science club, etc.). Start your networking circle by signing up for GU4U - <https://my.graceland.edu/ICS/Alumni_and_Friends/GU4U/>. Find winter break or summer job-shadowing and volunteer opportunities. \*Students who are considering a double major in Chemistry need to take MATH1510. \*\* If you have a transfer in a composition course, please take a liberal learning course in its place. | | | | | | | |
| **Second Year Fall** | **Learning Outcome** | **Sem**  **Hours** | **Date Met** | **Second Year Spring** | **Learning Outcome** | **Sem Hours** | **Date Met** |
| **BIOL2100 Cell Biology and Genetics w/ lab** |  | **4** |  | **Biology elective(s) \*\*\*(2)** |  | **7-8** |  |
| Liberal learning course Art**§** | GE3A | 3 |  | Liberal learning course Humanities**§** | GE3C | 3 |  |
| COMM1100 Foundations of Public Speaking | GE1B | 3 |  | ENGL2110 Composition II | GE1C | 3 |  |
| LEAD2100 Group Leadership I | LL | 2 |  | LEAD2200 Group Leadership II | LL | 2 |  |
| UNIV2100 Social responsibility | SS | 3 |  | Elective |  | 1 |  |
| **Total Hours** |  | **15** |  | **Total Hours** |  | **16-17** |  |
| **Notes:** Find student leadership positions or join a club or organization on campus (Science club, etc.). Check in with faculty regarding any standardized tests/requirements for grad school. Find winter break or summer job-shadowing and volunteer opportunities. ^ Maintain at least 15 credit hours to make sufficient progress towards graduation. §When you have completed your liberal learning courses, consider taking more biology electives to make yourself a more competitive applicant in the future.\*\* If you have a transfer in a composition course, please take a liberal learning or science elective course in its place. | | | | | | | |
| **Third Year Fall**  ***(check your degree audit!)*** | **Learning Outcome** | **Sem**  **Hours** | **Date Met** | **Third Year Spring** | **Learning Outcome** | **Sem Hours** | **Date Met** |
| **Biology elective(s) w/lab\*\*\*(upper level)** |  | **4** |  | **Biology elective(s) w/lab\*\*\*(upper level)** |  | **4** |  |
| **MATH1370 Statistics for Sciences\*** | GE2A | **3** |  | **BIOL/CHEM4111 Capstone Research I** |  | **1** |  |
| Liberal learning course - Social Sciences**§** | GE3E | 3 |  | General liberal learning course History**§** | GE3B | 3 |  |
| Elective |  | 3-4 |  | Elective (upper level) |  | 4 |  |
| LEAD3100 Organizational Leadership I | LL | 2 |  | LEAD3200 Organizational Leadership II | LL | 2 |  |
| Elective |  | 1 |  | Elective |  | 1 |  |
| **Total Hours** |  | **16-17** |  | **Total Hours** |  | **15** |  |
| **Notes:** Research and apply for an internship fall of the junior year to be completed summer after junior year. Connect with your faculty advisor for assistance with navigating this process. Connect with your faculty advisor in the fall of the junior year to learn more about graduate school applications and standardized test requirements for professional school. If you want to attend graduate school right after senior year, many applications open during the summer. Check in with your advisor during your junior year about career opportunities outside graduate programs. § When you have completed your liberal learning courses, consider taking more biology electives to make yourself a more competitive applicant in the future. If you are under 15 sh, consider taking an elective course. | | | | | | | |
| **Fourth Year Fall**  ***(apply for graduation!)*** | **Learning Outcome** | **Sem**  **Hours** | **Date Met** | **Fourth Year Spring** | **Learning Outcome** | **Sem Hours** | **Date Met** |
| **Biology elective(s) w/lab\*\*\*** |  | **4-8** |  | **Biology elective(s) w/lab\*\*\*** |  | **4-8** |  |
| **BIOL/CHEM4120 Capstone Research II** |  | **1-2#** |  | **BIOL/CHEM4130 Capstone Research III** |  | **1-2#** |  |
| Elective (s) |  | 3-6 |  | Elective (upper level) |  | 4 |  |
| LEAD4100 Life and Leadership Practicum I | LL | 2 |  | LEAD4200 Life and Leadership Practicum II | LL | 2 |  |
|  |  |  |  | Elective(s) |  | 3 |  |
| **Total Hours** |  | **14-19** |  | **Total Hours** |  | **13-16** |  |
| **Notes:** Check in with your advisor during your senior year about career opportunities outside graduate programs, including opportunities for a gap year that help make you a more competitive graduate school applicant. #Capstone Research II and III can be taken for 1-2 credits depending on how robust of a project you and your mentor design. When you have completed your liberal learning§ courses, consider taking more biology electives to make yourself a more competitive applicant in the future. | | | | | | | |
| **\*\*\***Biology electives - Students must take at least 22-24 s.h. with at least 2 courses from each area.  Area 1: +BIOL2430 Animal Biology w/ lab, +BIOL2440 Plant Biology w/lab, +BIOL3400 Ecology and Conservation Biology w/ lab  Area 2:  BIOL2360 Microbiology, +BIOL4XXX Molecular Genetics, +BIOL/CHEM4310 Biochemistry, +BIOL4460 Cell and Cancer Biology  Area 3: BIOL3420 Human Anatomy, BIOL3440 Human Physiology, +BIOL4400 Immunology  For students who plan to attend graduate school in plant biology, animal biology, ecology or a related field, it is highly recommended that you take **all** of the following: BIOL2430, BIOL2440, and BIOL3400, along with CHEM3410/3411 Org Chem I w/lab, CHEM3420/3421 Org Chem II w/lab, PHYS1410 Elements of Physics I w/lab and PHYS1420 Elements of Physics II w/lab. Check with your graduate program for exact requirements. Please meet with your faculty advisor to discuss.  DISCLAIMER: These plans are to be used as guides only and are subject to changes in curriculum requirements. Refer to your Graceland Catalog for complete and accurate information. Some courses listed on the plans may have prerequisites that have not been stated. The student has the ultimate responsibility for scheduling and meeting the graduation requirements. | | | | | | | | |
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